Five-Year Review Report

Miami County Incinerator
Miami County
Troy, Ohio

September 20, 2005

PREPARED BY:

U.S. EPA REGION 5
Chicago, Illinois

Approved by:

for Richard C. Karl, Director
Superfund Division

Date:

9/14/05

Five-Year Review Report

Table of Contents

List of Acronyms

ACRONYM	NAME OR TERM
AOC	Administrative Order on Consent
ARARs	Applicable or Relevant and Appropriate Requirements
CERCLA/SARA	Comprehensive Environmental Response, Compensation and Liability Act/Superfund Amendments and Reauthorization Act of 1986 (Superfund)
CD	Consent Decree
ESD	Explanation of Significant Differences
LTRA	Long Term Remedial Action
MNA	Monitored Natural Attenuation
NPL	National Priorities List
NREPA	Natural Resources and Environmental Protection Act
OEPA	Ohio Environmental Protection Agency
O&M	Operation and Maintenance
ppb	Parts per Billion concentration
ROD	Record of Decision
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/ Feasibility Study
SOW	Statement of Work
TBC	To Be Considered
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

Executive Summary

The purpose of a statutory Five-Year Review is to evaluate whether a completed remedial action remains protective of human health and the environment where hazardous waste remains on-site at levels that do not allow for unlimited use and unrestricted exposure. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and identify recommendations to address them.

U. S. EPA conducted this statutory Five-Year Review under Section 121(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP). The next Five Year Review is due by September, 2010.

This review will be placed in the Site files and local repositories for the Miami County Incinerator Site at the following locations and be available for viewing during normal business hours:

U. S. Environmental Protection Agency
Region 5 Records Center- Seventh floor
77 W. Jackson Blvd-7th floor.
Chicago, IL 60604

Ohio Environmental Protection Agency
Southwest District Office
401 E. Fifth Street
Dayton, Ohio 45402

The public repository is located at the Niles District Library
419 West Main Street
Troy, Ohio 45373

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name *(from WasteLAN)*: Miami County Incinerator		
EPA ID *(from WasteLAN)*: OHD980611800		
Region: 5	**State:** OH	**City/County:** Troy, Miami County
SITE STATUS		
NPL status: **X** Final ☐ Deleted ☐ Other (specify)		
Remediation status (choose all that apply): ☐ Under Construction **X** Operating ☐ Complete		
Multiple OUs?* ☐ YES **X** NO	Construction completion date: November 13,1996 (Preliminary Closeout Report)	
Has site been put into reuse? **X** YES ☐ NO		
REVIEW STATUS		
Lead agency: **X** EPA ☐ State ☐ Tribe ☐ Other Federal Agency		
Author name: Michael Berkoff		
Author title: Remedial Project Manager	**Author affiliation:** SF RRB-1, Section 2	
Review period:** September 20, 2000 - September 2005		
Date(s) of site inspection: August 15, 2005		
Type of review: **X** Post-SARA ☐ Pre-SARA ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead ☐ Regional Discretion		
Review number: ☐ 1 (first) **X** 2 (second) ☐ 3 (third) ☐ Other (specify)		
Triggering action: ☐ Actual RA Onsite Construction at OU # 1__ ☐ Actual RA Start at OU#____ ☐ *Construction Completion* **X** *Previous Five-Year Review Report* ☐ Other (specify)		
Triggering action date *(from WasteLAN)*: First Five-Year Report: September 20, 2000		
Due date *(five years after triggering action date)*: September 20, 2005		

Issues:

Groundwater contamination is an on-going concern at the Site. The remedy for this is a groundwater pump and treat system with discharge to the Troy Publicly Owned Treatment Works (POTW). The monitoring of the contaminants of concern (COC's) is ongoing and shows that some contaminants are still above target levels. Most of these COC's that are above target levels are breakdown products, and their presence likely demonstrates the breakdown of other contaminants. The Miami County Sanitary Engineering Office has had to shut down the extraction system in the past when there has been storm water runoff overflow to the POTW. Within the next few months, the Miami County Sanitary Engineering Office should be replacing the 8 inch diameter piping leading from the GWES to the POTW with 12 inch piping. The new design will be gravity driven instead of the current pump driven system. This should prevent the need for temporary shutdowns of the GWES during heavy storm runoff.

The risk associated with vapor intrusion at the site is unknown. Vinyl Chloride is the primary COC for this risk. Of the on-site buildings, one is used for offices, while the others are open-air industrial. All of the buildings on the site are on the contaminant plume, but concentrations of Vinyl Chloride beneath the administrative offices, which would likely be the building associated with the greatest risk, are low. Additionally, the office, like all the buildings on-Site lacks a basement, which is the typical route of vapor intrusion. The newest building on the Site, the Power and Control building was designed with a passive under slab venting system.

Recommendations and Follow-up Actions:

U.S. EPA recommends the continued use of the groundwater extraction system and the current monitoring regime until contaminants reach cleanup standards or background concentrations (O&M). Residences and business down-gradient of the site have been put on city of Troy municipal water supply to avoid potential hazards in the groundwater. This appears to be a successful solution to the problem, and all residences and buildings in the down-gradient area should remain on Troy's water supply for the foreseeable future. Vapor intrusion pathways have not been studied as a part of the remedy at the Site. As many of the onsite buildings are over the groundwater plume, an investigation into this matter should occur.

Protectiveness Statement:

The remedy selected for the MCI Site appears to be protective of human health and the environment, but this can not be confirmed until a vapor intrusion study and institutional control study has been done. These follow-up actions are expected within one year from the date of this review. The components of the remedy, at the Site, include the capping of certain waste zones, a groundwater extraction system, a soil vapor

extraction system, and the provision of municipal water to residents down gradient of the Site. The residents affected by the contaminant plume were connected to the City of Troy water system in 1989. The status of the remedy is evaluated through the use of ongoing monitoring of the groundwater and discharge to the local water treatment facility. These components of the remedy appear to have been implemented in accordance with the performance standards specified in the ROD and ESD.

Five-Year Review Report

I. Introduction

The Purpose of the Review

The purpose of a statutory Five-Year Review is to evaluate whether a completed remedial action remains protective of human health and the environment at sites where hazardous waste remains on-site at levels that do not allow for unlimited use and unrestricted exposure. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and identify recommendations to address them.

Authority for Conducting the Five-Year Review

U.S. EPA is preparing this Five-Year Review pursuant to CERCLA Section 121(c) and the National Contingency Plan (NCP). CERCLA Section 121(c) states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section 104 or 106, the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

U.S. EPA interpreted this requirement further in the NCP; 40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii) which states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for the unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

Who Conducted the Five-Year Review

Mr. Michael Berkoff, Remedial Project Manager, U.S. EPA Region 5, performed this Five-Year Review. The Five-Year Review was based, in part, on the ongoing monitoring activities at the Site, and the interpretation of that data. In addition the Project Manager reviewed documents, including the ROD, ROD Amendment, ESD, SOW, Consent Order, Construction Completion Report and results of supplemental studies conducted at the Site. U.S. EPA completed this second Five-Year Review based upon the information obtained from these sources and activities.

Other Review Characteristics

This is the second Five-Year Review for the Site. The triggering action for this review is the date of signature of the first Five-Year Review, September 20, 2000. The review is necessary since hazardous substances, pollutants and contaminants are left on-site above levels that do not allow unlimited and unrestricted exposure.

II. Site Chronology

Event	Date
NPL Listing	September 1984
NPL RP Search	June 1984
AOC	August 1984
Special Notice issued	March 1989
Consent Decree	December 1989
Community Relations Plan	April 1991
RI Report	June 1989
Public Comment	June 1989
ROD	June 1989
Remedial Design	September 1991
Remedial Action Start	November 1994
LTRA	May 1995
Preliminary Close Out Report	November 1996
Start of O&M	November 1996
Five-Year Review	September 2000
Current 5 Year Review	September 2005

III. Background

Physical Characteristics

The 65-acre Miami County Incinerator site located in Miami County, Ohio (8th Congressional District) contains five areas of concern including: the South Landfill; the North Landfill; the Liquid Disposal Area; the Ash Disposal Pit, the Ash Pile and the Groundwater (Attachment B). The incinerator and landfills were opened in 1968 to process and dispose of municipal and industrial wastes. Combustible wastes were to be incinerated and the non-combustible wastes were to be landfilled, however large volumes of combustible wastes were landfilled along with non-combustible wastes. Liquid wastes including waste oils and solvents were dumped or buried on-site. A contaminated plume of organic chemicals flows from the liquid disposal area into the Great Miami River. This plume contaminated wells of many residents who live near the Site. Municipal wells serving 19,000 people are located within 3 miles of the Site. The plume contaminates a sole source aquifer.

Geology:

The local geology is a complex interstratification of glacial outwash, glacial till and recent fluvial deposits. These deposits form two separate aquifers in the immediate vicinity of the Site. The upper aquifer is unconfined and is separated from the lower aquifer by a glacial till unit of variable thickness and continuity. The lower aquifer is generally under confined conditions except in those areas where the intervening confining unit is absent. In those locations, both aquifers behave as a single aquifer and are under water table conditions. The general direction of groundwater flow is to the east towards the Greater Miami River. Available data indicate that groundwater migrating from the Site (in both aquifers) discharges to the river within ¾ of a mile of the southern property boundary of the Site.

Groundwater:

The city of Troy well fields are 2.5 miles south of the Site and would not be affected by contaminants released from the Site (ROD). The groundwater contamination at the Site includes the volatile organic compound (VOC): vinyl chloride. The PRP's for the site need to investigate determine the threats caused by these contaminants by vapor intrusion into onsite and offsite buildings.

Land use:

Land use near the Site is mostly agricultural. The area is well suited to farming because of large areas of deep, fertile level soils. Corn, wheat, soybeans, and hay are the principal crops. After agricultural, the next most important land use is rural

residential, the residences being located along surrounding roads. Approximately 19,000 residents live within a 3 mile radius of the Site). After residential use, the next most important land uses are commercial and municipal (county).

The property is owned by the county and some of it is still operated as a trash transfer station by Miami County. The other parts of the Site are used by the county sheriff's office, a minimum security prison, and a juvenile detention center. The Site and its environmental management are handled by the Miami County sanitary engineering office. There are a couple residences directly down-gradient of the Site, but they have been placed on the municipal water supply. Current local laws and ordinances prevent further residential development between the Site and the Great Miami River.

History of Contamination:

The incinerator was designed to burn 150 tons per day of combustible rubbish. Construction was initiated in 1967 and operations began in 1968. The landfill area north of the unnamed creek that runs across the property was used for the disposal of fly ash, waste solvents, industrial sludges, and oils. The landfilling was a trench–and-backfill operation. When operating, the incinerator used a scrubber system to remove particulates from air emissions. Scrubber wastewater and ash quench water were pumped to the unlined ash disposal lagoon east of the landfill area, south of the incinerator building. Ash from the incinerator was piled just north of the incinerator building or landfilled. The ash pile east of the lagoon is still present. The ash piled north of the incinerator building was apparently landfilled at some later date.

As early as May 1973, OEPA personnel expressed concern over unsanitary and unacceptable disposal practices at the Site. In 1973, OEPA began a program of biannual sampling and analysis of groundwater from the County Highway Garage and Sheriff's Hall wells, surrounding residential wells, and two on-site wells.

During an OEPA site inspection in October 31, 1973, it was estimated that nearly 30,000 gallons of liquid wastes, consisting primarily of waste oil, were being accepted weekly. These were dumped directly into the ground or buried in containers. The total volume of landfilled liquid waste may exceed 8,000,000 gallons.

In November 1973, OEPA stated that the dumping of liquids at the Site posed an extreme hazard to groundwater and subsequently ordered the facility to cease disposal of liquid waste by April 19, 1974. Some liquid waste disposal continued until March 1974. By this time between 700 and 1,200 tons of refuse per week were being accepted. The facility received approximately 50% municipal waste, 30% commercial waste, and 20% industrial waste. Landfilling of waste continued until October 1978 when the facility converted to its present use, a solid waste transfer station.

The Site was placed on the National Priorities List (NPL) in October of 1984. U.S. EPA

conducted a Remedial Investigation and Feasibility Study (RI/FS) which detected fifty-nine contaminants of concern in the soils and groundwater at the Site. Contaminants were detected in residential and monitoring wells down-gradient of the Site in excess of the Safe Drinking Water Act Maximum Contaminant Levels (MCL's). The Liquid Disposal Area (LDA) is the primary source of the contaminant plume that has affected groundwater as far away as 3/4 mile from the Site. In 1989, affected residents were connected to the City of Troy water supply.

IV. Remedial Actions

Remedy Selection

On June 30, 1989, U.S. EPA issued a Record of Decision (ROD) which selected the cleanup remedy at the Site. The ROD denoted seven areas of concern to address soil and groundwater contamination. Following the issuance of the ROD, the PRPs generated new information which resulted in a modification of the remedy selected in the ROD. While the overall remedy was not fundamentally altered, changes were made to several components of the remedy selected in the ROD. In accordance with CERCLA Section 117(c) this Explanation of Significant Differences (ESD) addresses those changes and sets forth the reasons those changes were made. The changes to the ROD were made because the new information led U.S. EPA to determine that modifications could be made to several components that would achieve performance standards equivalent to those enunciated in the ROD in a more cost effective manner.

The approved remedy for the MCI site is presented in the Remedial Design/Remedial Action Scope of Work, Miami County Incinerator Site, Miami County, Ohio (SOW), dated August 1989. The ROD was used as the basis for the SOW and the remedial components identified in the SOW were implemented in accordance with the Consent Decree entered with the court on March 30, 1993.

The remedial action goals of the ROD are to minimize risks to human health and the environment through the combined use of engineering and institutional controls to prevent contact with contaminated media and to restore contaminated ground water to risk-based cleanup goals. The following is a summary of the remedy for each area addressed in the ROD and the ESD:

1. South Landfill: Began 4/95 ended 12/95
   a. Closure according to State Landfill Requirements
      - 12 inches compacted barrier layer achieving a maximum of 1.0 x 10-7 cm/sec hydraulic conductivity.
      - 12 inches of cohesive soils
      - 6 inches of drainage media
      - 6 inches of vegetative soil
   b. Fence landfill area and post warning signs
   c. Deed notifications/property use restrictions to prohibit use of groundwater and prevent exposure to contaminants
   d. Ongoing monitoring

2. North Landfill: Began 4/96 ended 12/96
   a. Closure according to State Landfill Requirements
      - 12 inches compacted barrier layer achieving a maximum of 1.0 x 10-7 cm/sec hydraulic conductivity.

- 12 inches of cohesive soils
- 6 inches of drainage media
- 6 inches of vegetative soil

b. Fence landfill area and post warning signs

c. Deed notifications/property use restrictions to prohibit use of groundwater and prevent exposure to contaminants

d. Ongoing monitoring

3. Ash Disposal Pit and Ash Pile: Began 4/95 ended 12/95

a. Excavation and consolidation of ash wastes and contaminated soils for placement beneath North and South Landfill caps.

b. Ash Disposal Pit was capped in place. This cap consisted of a Type II polyethylene geotextile fabric, 2 feet of re-compacted clay, 40-mil HDPE flexible membrane liner, Type I non-woven, needle punched polypropylene geotextile filter fabric layer, 1 foot 4-inch aggregate base and an 8 inch thick reinforced concrete pavement. The area is currently used by Miami County as a parking area for truck trailers at the new solid waste transfer station. The construction of the parking area for the solid waste transfer station was completed outside the scope of the Consent Decree.

c. Treatment if required under RCRA

4. Liquid Disposal Area and Groundwater: Began 4/96 ended 12/96

a. Vapor Extraction
- Vacuum extraction of VOC's from waste & soils
- Vapor phase carbon treatment or equivalent, catalytic oxidation or other appropriate treatment of exhaust.

b. Groundwater pump and treat with discharge to Troy POTW

c. Double barrier cap
- 12 inches compacted barrier layer achieving a maximum of 1.0 x 10-7 cm/sec hydraulic conductivity
- 12 inches of cohesive soils
- 40-mil HDPE liner
- 9 inches of drainage media
- 9 inches of fill material
- 6 inches of vegetative soil

d. Ongoing monitoring

e. Continue connection of residential and commercial groundwater users to potable water supply (completed 1989)

f. Prevent drilling of new wells that may expose groundwater users to contaminants or interfere with the remedial action at the Site. This was implemented through the use of deed restrictions and notifications in the property deed.

5. Former Waste Water Scrubber Lagoon: Began 4/95 ended 12/95
This area was backfilled with clean fill during Phase II remediation activities and deed restrictions were implemented to prohibit residential land use.

6. Stained Soil Area:
This area had low levels of some contaminants but the risks associated with these contaminants were below the EPA target cancer risk of 1E-04 to 1E-06 and the target HI of 1.0 and were therefore considered to be acceptable.

7. Eldean Tributary:
Additional sampling of the sediments in this area indicated that no further remedial action was necessary.

Remedy Implementation

The Remedial Construction (RC) activities were broken into two phases, Phase I and Phase II. Activities associated with Phase I included items 1, 3 and 5 above with the exception of the Ash Disposal Pit. The PRPs requested that the Ash Disposal Pit be capped in place with a double barrier cap plus two feet of reinforced concrete. This enabled Miami County to use this area as a transfer station parking area. Activities associated with the Ash Disposal Pit capping were completed outside of the Scope of the Consent Decree. The Ash Disposal Pit cap was completed in 1993 whereas Phase I activities were completed 12/4/95. Activities associated with Phase II included items 2 and 4 above. Phase II activities were completed 12/5/96. The remedial actions conducted at the Site complied with all U.S. EPA quality assurance and quality control (QA/QC) procedures and protocol.

The two active remedial systems implemented at the Site were the soil vapor extraction system (SVE) and the ground water extraction system (GWES). The SVE system has since been decommissioned. The remedial goal of the SVE system is to substantially reduce the suspected source of VOC ground water contamination in the LDA. The remedial goal of the GWES is to prevent continued migration of contaminated ground water from the Site and restore ground water to cleanup standards consistent with CERCLA and SARA. The cleanup standards for Site ground water are as follows:

1) Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act (SDWA) at present or adopted during the operation of the GWES, including the following contaminants for which the MCLs were exceeded at the MCI Site at the beginning of operation of the GWES;

barium	1000 ppb(parts per billion)
trichloroethene	5 ppb
1,1,1-trichloroethane	200 ppb
vinyl chloride	2 ppb

2) Water Quality Criteria (WQC) established under the Clean Water Act (CWA) at present or adopted during the operation of the GWES that have been adapted for drinking water only (set forth in the Superfund Public Health Manual) or designed for the protection of aquatic organisms; for compounds for which MCLs of WQC have not been established, a maximum cumulative excess lifetime cancer risk of 1 X 10-5 along a north-south line located east of the B&O Railroad which approximates the boundary of the waste management area, and a maximum cumulative excess lifetime cancer risk of 1 X 10-6 at the MCI Site boundary or at any on-site receptor.

The risk calculations shall be performed in accordance with the methods specified in the Superfund Public Health Manual and any subsequent revisions in effect at the time of the calculations. The toxicity data used shall be the most current data contained in such manual or available from U.S. EPA's Cancer Assessment Group. The compounds to be considered in the calculation of the cumulative excess lifetime cancer risk shall include all compounds identified at the time of the calculations as possible, probable or known human carcinogens, including the following compounds currently designated as such, that have been detected in the ground water at the MCI Site:

arsenic
methylene chloride
trichloroethene
vinyl chloride
tetrachloroethene
bis(2-ethyl hexyl)phthalate
n-nitrosodiphenylamine and;

A maximum Hazard Index (HI) of one, calculated in accordance with the Superfund Public Health Manual and any subsequent revisions, for all compounds identified in the ground water at the MCI Site for which data required for the HI calculation are available, will include the following compounds:

antimony
barium
toluene

These cleanup standards shall be met unless the Settling Defendants obtain a waiver from U.S. EPA as set forth in the relevant provisions of the Consent Decree.

Soil Vapor Extraction System

The SVE system located in the LDA, became operational in November of 1996. Conestoga-Rovers & Associates (CRA) acting on behalf of the BIEC, petitioned U.S.

EPA to shut down and decommission the SVE system in correspondence dated October 6, 1999. CRA's petition concluded that the SVE system had met the termination criteria specified in Section 8.2 of the approved February 1997 Operation, Maintenance, and Monitoring Plan (O&M Plan). These criteria are:

"Operation of the SVE system will continue until the extracted volatile organic compound (VOC) rate is less than 1 pound per day based on the mini-canister sampling and analyses as described above, or until asymptotic conditions are evident for greater than 6 months."

CRA concluded that, based on the mini-canister sampling results, asymptotic conditions had occurred over the last 12 months of operation. U.S. EPA submitted comments on the petition to shutdown the SVE system to CRA in correspondence dated December 2, 1999. U.S. EPA requested additional information and a comprehensive statistical evaluation of the SVE system influent analytical data to support the attainment of the termination criteria specified O&M Plan. CRA responded to U.S. EPA comments in correspondence dated January 28, 2000. U.S. EPA gave verbal approval for the decommissioning of the SVE system with concurrence from Ohio EPA. The decommissioning work plan was submitted by CRA on April 5, 2000 and approved by U.S. EPA with concurrence by Ohio EPA on May 18, 2000. The decommissioning of the SVE system was completed in July of 2000 and a report detailing the work and certifying completion of the decommissioning was submitted on August 17, 2000.

The SVE system removed approximately 3,789 pounds of VOCs during operation from November 1996 to August 1999.

Ground Water Extraction System

The Ground Water Extraction System (GWES) consists of two components; the Boundary Containment System (BCS) and the Source Control System (SCS). The BCS is for hydraulic containment of ground water in the upper and lower aquifer at County Road 25A. The SCS is used to contain the ground water contaminant plume down gradient of the LDA. The extracted ground water is discharged directly to the Miami Couty sanitary sewer system for treatment by the City of Troy POTW.

The BCS consists of four extraction wells (EW-1 through EW-4) which pump at a combined rate of approximately 140 GPM. The SCS consists of one extraction well pumping at a rate of approximately 5 GPM. The performance of the GWES is evaluated through water level monitoring in monitoring wells at the Site. This performance monitoring currently occurs of a quarterly basis. The results of the water level measurements are contoured and plotted on a map of the Site to determine if drawdown in the vicinity of the extraction wells is occurring. Currently, extraction wells EW-1, EW-2, EW-3, EW-4 and PW5A (SCS well) appear to be operating as designed

and within the performance standards specified in the ROD. During the last Five-Year Review, the issue was raised as to whether the capture zone for EW-1 may not be sufficient to prevent contaminated ground water in the lower aquifer present in the vicinity of monitoring well cluster CH16 (A and B) from migrating off-site. This observation is based on water level data from the first two quarters of 2000 and analytical data from well CH16B. The analytical data suggested that although concentrations of vinyl chloride have decreased over the three prior sampling events, relatively high levels (170 ppb) were still present in the vicinity of the well. The July 2000 Ground water Extraction and Soil Vapor Extraction Summary report from CRA indicated that ground water extraction rates increased in this area to improve the horizontal extent of capture. The vinyl chloride concentrations for CH16B have decreased from 170 ppb in 2000 to 5.8 ppb as of 12/2/04 indicating that increasing the extraction rates in this area have been somewhat successful.

The GWES has extracted a total of 509,196,514 gallons of groundwater from startup in November 1996 through June 2005. Approximately 2,331 pounds of VOCs were discharged for treatment to the City of Try POTW during this time period.

Currently, Remedial Construction activities are complete. The remedies are in place and operational. The Site entered Operation and Maintenance (O&M) activities following a one year commissioning period. During this one year commissioning period, all performance deficiencies of the Remedial Action systems were corrected.

System Operation and Maintenance

The Site entered Operation and Maintenance (O&M) activities following a one year commissioning period. The original O&M plan for the site called for the maintenance of the landfills, both of the extraction systems and the on-going sampling of the groundwater and the extraction discharge. The target goals for the SVE system and the GWES are discussed in the Remedy Implementation Section. The SVE system was decommissioned in 1999 while the GWES is still in operation. The GWES is maintained by both employees of the Miami County Sanitary Engineering Office and a private contractor. The Miami County Sanitary Engineering Office maintains the landfills.

Operation and maintenance is performed in accordance with the February 26, 1997 Operation, Maintenance and Monitoring Plan. No significant changes to operation and maintenance activities have been required, except for the semi-annual acid cleaning of the extraction wells that is required to control iron bacteria fouling of the extraction well screens. Bi-annual operation and maintenance progress reports have been submitted to EPA and Ohio EPA since commencement of the O&M period (November 1996).

Monitoring Well Systems

The groundwater monitoring well system installed during the remedial design/remedial construction phase continues to be the arrangement used to monitor the effectiveness of the groundwater remedy (Attachment B). The monitoring well system is divided into five categories as follows:

- Background;
- Landfill;
- Remote;
- Performance; and
- Compliance.

Each well category has a different monitoring frequency, as detailed in the Operation, Maintenance and Monitoring Plan. Groundwater monitoring reports have been submitted to EPA and Ohio EPA after completion of each groundwater monitoring event (Attachment C).

The soil vapor monitoring wells installed to monitor the effectiveness of SVE system were abandoned after completion of the soil vapor extraction remedy, as detailed above.

V. Progress since the last Five-Year Review.

O&M has continued at the site. There has been a reduction in the concentrations in the COCs. This has been observed in both the groundwater monitoring wells and in the discharge from the GWES to the Troy POTW. An analysis of the groundwater monitoring data shows a general reduction in size of the contaminant plumes.

Approximately 1,525 pounds of VOCs were removed from the groundwater by the groundwater extraction system from startup in November 1996 to June 2000, and 665 pounds from July 2000 to June 2005. This reduction in VOC removal from the groundwater during the last five years is consistent with the dropping concentrations of VOCs in the groundwater, as reported in the annual groundwater monitoring reports. The groundwater extraction system continues to be effective in containing the contamination plume within the groundwater at the Site and in remediating the Site groundwater. There is also evidence that natural attenuation processes are active in reducing the concentrations of site related VOCs in the groundwater.

The site continues to be well maintained and monitored, with good vegetative cover maintained on landfill caps, and site security fences in good condition.

VI. Five-Year Review Process

Administrative Components

This second Five-Year Review was based, in part, on a review of Groundwater Monitoring Reports, other O&M reports and the ROD for the Site. As a part of the review, U.S. EPA conducted a site visit which included the review of the physical condition of the site and O&M related documents (Attachment D). A study of the institutional controls by the PRP's is underway. They have agreed to do this after U.S. EPA sent them a letter asking for their cooperation in the evaluation of the institutional controls at the Site (Attachments E&F). Additionally, this report was generated with the cooperation of the PRP's and the state of Ohio EPA.

Community Involvement

U.S. EPA placed public notices in the local newspaper in the form of advertisements. The advertisements asked private citizens to contact Michael Berkoff of the U.S. EPA, at 312-353-8983, if they had any concerns or issues that they believed to require attention in the Five-Year Review Process. The advertisement was placed in the Troy Daily News on April 15. Michael Berkoff was not contacted by any citizens after the posting of this notice.

Site Inspection

U.S. EPA conducted an inspection of the Site on August 15, 2005. Representatives of the PRP and their environmental contractor were there to provide information and answer questions (Attachment D). The purpose of the inspection was to assess the protectiveness of the remedy and whether the conditions at the site were in keeping with the remedial design set forth in the ROD and the O&M. The site visit included a visual inspection of the remedy components and a review of documents related to the O&M at the site. The latter were found to be complete and meeting the necessary requirements.

The physical components of the remedy, the landfills and the GWES, appeared to be in good condition. There were no signs of cracking or deterioration of the landfills and their drainage swales. The cover for both of these remedy components was well maintained. There were records documenting regular inspections of the GWES pumps. During the site visit, U.S. EPA observed them to be operational, and they appeared to be well maintained.

VII. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents? YES

Remedial Action Performance

U.S. EPA concludes that the remedy at the Site is functioning as intended by the ROD and ROD amendment. This determination was made after a review of the relevant documents and a site inspection. The major components of the remedy are the landfill caps, a SVE system and a GWES. The SVE system was located at the LDA and was in operation between the years of 1996 and 1999. It was shutdown when it was determined that it met the requirements of the 1997 O&M plan. The landfill caps appear to be in good condition, and there have been no reported problems with them. Data from the GWES and the monitoring wells show there to be a general decline in contaminants at the Site since the implementation of the remedy. The groundwater remedy will be considered complete when the overall cancer risk posed by the COC's is 1 X 10 -6 and the Hazard Index is 1. Once these values have been achieved, it will be possible to consider the closure of the GWES.

System Operation and Maintenance

There are two components to the remedy that are currently undergoing operations and maintenance, the groundwater extraction system and the landfill caps. Both of these appear to be operating in compliance with the ROD. Periodic maintenance of the groundwater extraction wells by acid cleaning has been required. The most recent of which was done on April 19 to 22, 2005.

Monitoring Well Systems

The monitoring well system appears to be in good condition and fully operational. The number of wells appears to be sufficient for the groundwater monitoring program. Data from groundwater samples have been used to generate an informative depiction of the contaminant plume in both the upper and lower aquifers.

Implementation of Institutional Controls and Other Measures

The PRP's for the site have agreed to conduct an IC study and the results are pending.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy still valid? YES.

There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy.

Changes in Standards and To Be Considered

A list of the primary Applicable or Relevant and Appropriate Requirements (ARARs) are included in the Attachment B. There have been no changes in these ARARs that affect the protectiveness of the remedy. In November 2002, U.S. EPA issued draft guidance recommending a screening process for determining if groundwater conditions at a site warrant a detailed investigation of vapor intrusion pathways.

Changes in Exposure Pathways

There have been no changes in the potential exposure pathways at the Site since the implementation of the remedy for the Site. The property use has not changed since the implementation of the ROD. It is anticipated any change in use of the property should be done in conjunction with the Site's current zoning restrictions and exposure pathway assessments.

Soil vapor intrusion was not considered in the first 5 year review for this site. A review of the data from the Annual 2004 Groundwater monitoring report shows that vinyl chloride is present in a groundwater contamination plume that lies beneath all of the buildings at the Site. As of yet, the PRP's for the Site have not studied the risk associated with this pollution. This should be done following this Five-Year Review of the Site remedy.

Changes in Toxicity and Other Contaminant Characteristics

The groundwater monitoring data show that there has been a drop in total VOC's since the implementation of the site remedy in 1996. Currently, cis-1,2-dicholorethene, Vinyl Chloride and Toluene are the VOC's showing the highest level of detection. The values for both of these continue to fluctuate significantly. Vinyl Chloride and cis-1,2-dicholorethene are breakdown products of tetrachloroethylene (PCE) and trichloroethylene (TCE). So, it appears that the changes in the contaminant composition suggest the success of the remedial action through the breakdown of the initial COC's.

Changes in Risk Assessment Methods

Standardized risk assessment methods have not changed in a way that would affect the assessment of the protectiveness of the remedy. It has been mentioned in previous

parts of this Five-Year Review that in November of 2002, U.S. EPA developed draft guidance for the screening of vapor intrusion risks into buildings by VOCs. A risk analysis for vapor intrusion should be performed for the Site.

Expected Progress Towards Meeting Remedial Action Objectives

The remedy for the Site is progressing through the GWE processes. The data from the monitoring show that a breakdown of the initial COC's has occurred at the Site. Progresses toward the clean-up standards continue to be made at the Site. The monitoring program should ensure that any changes in contaminant levels should be detected and addressed as necessary.

Changes in Standards and To Be Considered Criteria

There have been no changes to the ROD since the last Five-Year Review in 2000.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy? NO

Technical Assessment Summary

A study of the potential risks associated with the potential intrusion of VOC vapors into buildings within the contaminant plume needs to be done for the site. Aside from this, there have been no newly identified risks to human health or ecological targets, impacts from natural disasters, or any other information that has been identified that could affect the protectiveness of the remedy for the Site. The PRP's have agreed to conduct a study of the institutional controls, the results of which are still pending.

VIII. Issues

Groundwater contamination is an on-going concern at the Site. The remedy for this is a groundwater pump and treat system with discharge to the Troy Publicly Owned Treatment Works (POTW). The monitoring of the contaminants of concern (COC's) is ongoing and shows that some contaminants are still above target levels. Most of these COC's that are above target levels are breakdown products, and their presence likely demonstrates the breakdown of other contaminants. The Miami County Sanitary Engineering Office has had to shut down the extraction system in the past when there has been storm water runoff overflow to the POTW. Within the next few months, the Miami County Sanitary Engineering Office should be replacing the 8 inch diameter piping leading from the GWES to the POTW with 12 inch piping. The new design will be gravity driven instead of the current pump driven system. This should prevent the need for temporary shutdowns of the GWES during heavy storm runoff.

The risk associated with Vapor intrusion at the site is unknown. Vinyl Chloride is the primary COC for this risk. Of the on-site buildings, one is used for offices, while the others are open-air industrial. All of the buildings on the site are on the contaminant plume, but concentrations of Vinyl Chloride beneath the administrative offices, which would likely be the building associated with the greatest risk, are low. Additionally, the office, like all the buildings on-Site lacks a basement, which is the typical route of vapor intrusion. The newest building on the Site, the Power and Control building was designed with a passive under slab venting system.

IX. Recommendations and Follow-Up Actions

Recommendations/Follow-up	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions: Affects (Current/Future) Protectiveness (Y/N)	
Annual Groundwater Monitoring/ Reporting	PRP	OEPA/ U.S.EPA	Quarterly Determina-tion	NO	YES
Risk Screening for Vapor Intrusion Pathway	PRP	OEPA/ U.S. EPA	Work Plan to be submitted 12/30/05	YES	YES
Institutional Control Plan: deed restrictions and water supply issues (pending outcome of IC study by PRP)	PRP	OEPA/ U.S. EPA	9/2006	YES	YES

X. Protectiveness Statement

The remedy selected for the MCI Site appears to be protective of human health and the environment, but this can not be confirmed until a vapor intrusion study and institutional control study has been done. These follow-up actions are expected within one year from the date of this review. The components of the remedy, at the Site, include the capping certain waste zones, a groundwater extraction system, a soil vapor extraction system, and the provision of municipal water to residents down gradient of the Site. The residents affected by the contaminant plume were connected to the City of Troy water system in 1989. The status of the remedy is evaluated through the use of ongoing monitoring of the groundwater and discharge to the local water treatment facility. These components of the remedy appear to have been implemented in accordance with the performance standards specified in the ROD and ESD.

XI. Next Five-Year Review

The third Five-Year Review will be conducted by September 20 2010, which is five years from the signature of this Five-Year Review.

ATTACHMENT A

List of Documents Reviewed

1 Record of Decision, Miami County Incinerator Superfund Site, Miami County, Troy, Ohio, U.S.EPA, September 1989

2 ESD Miami County Incinerator Superfund Site, Miami County, Troy, Ohio, U.S.EPA, December 1989

3 Five Year Review Miami County Incinerator Superfund Site, Miami County, Troy, Ohio, U.S.EPA, March 1999

4 Remedial Investigation Miami County Incinerator Superfund Site, Miami County, Troy, Ohio, U.S.EPA, July 1986

5 Annual 2003 Groundwater Monitoring at the Former Miami County Incinerator, Conestoga Rovers, February 2004

6 Annual 2004 Groundwater Monitoring at the Former Miami County Incinerator, Conestoga Rovers, April 2005

7 Biannual Progress Report Miami County Incinerator Superfund Site, Troy, Ohio, Conestoga Rovers, January 2005

8 Biannual Progress Report Miami County Incinerator Superfund Site, Troy, Ohio, Conestoga Rovers, July 2005

9 OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance), U.S.EPA, November 2002.

ATTACHMENT B

Figure 1 Site Location Map

Figure 2 3D Terrain Map

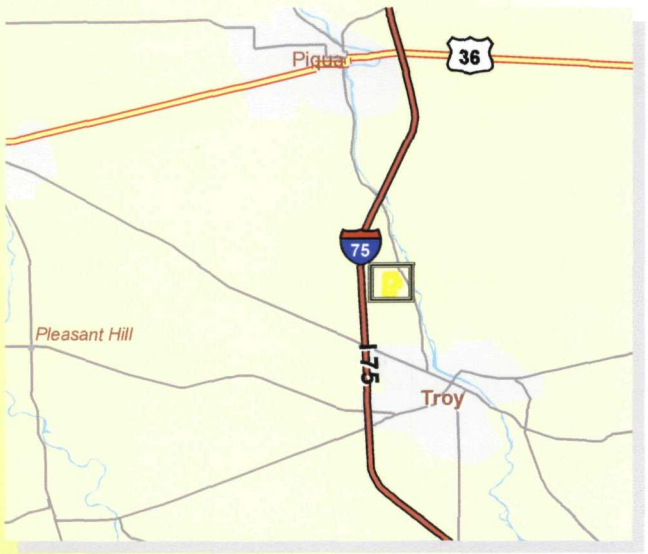
Figure 3 Site Map

Figure 4 Well Location Map

Miami County Incinerator Superfund Site

1) State

2) Miami County



3) Miami County Incinerator

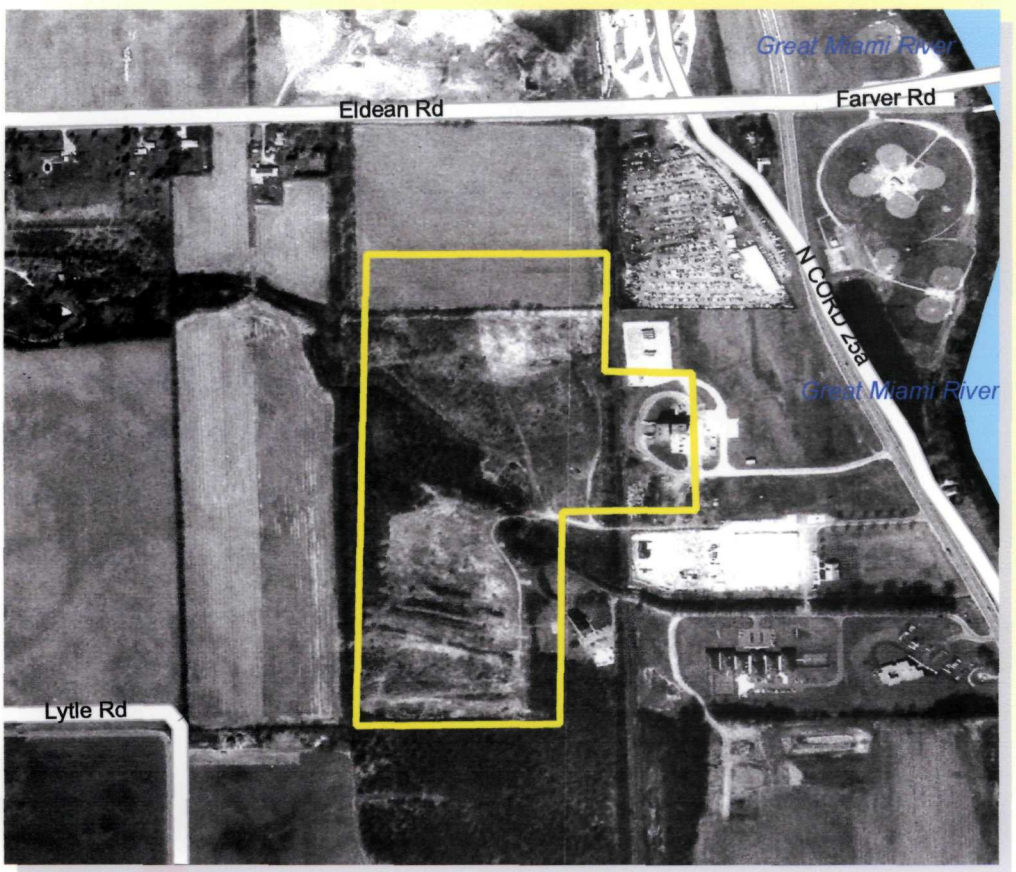
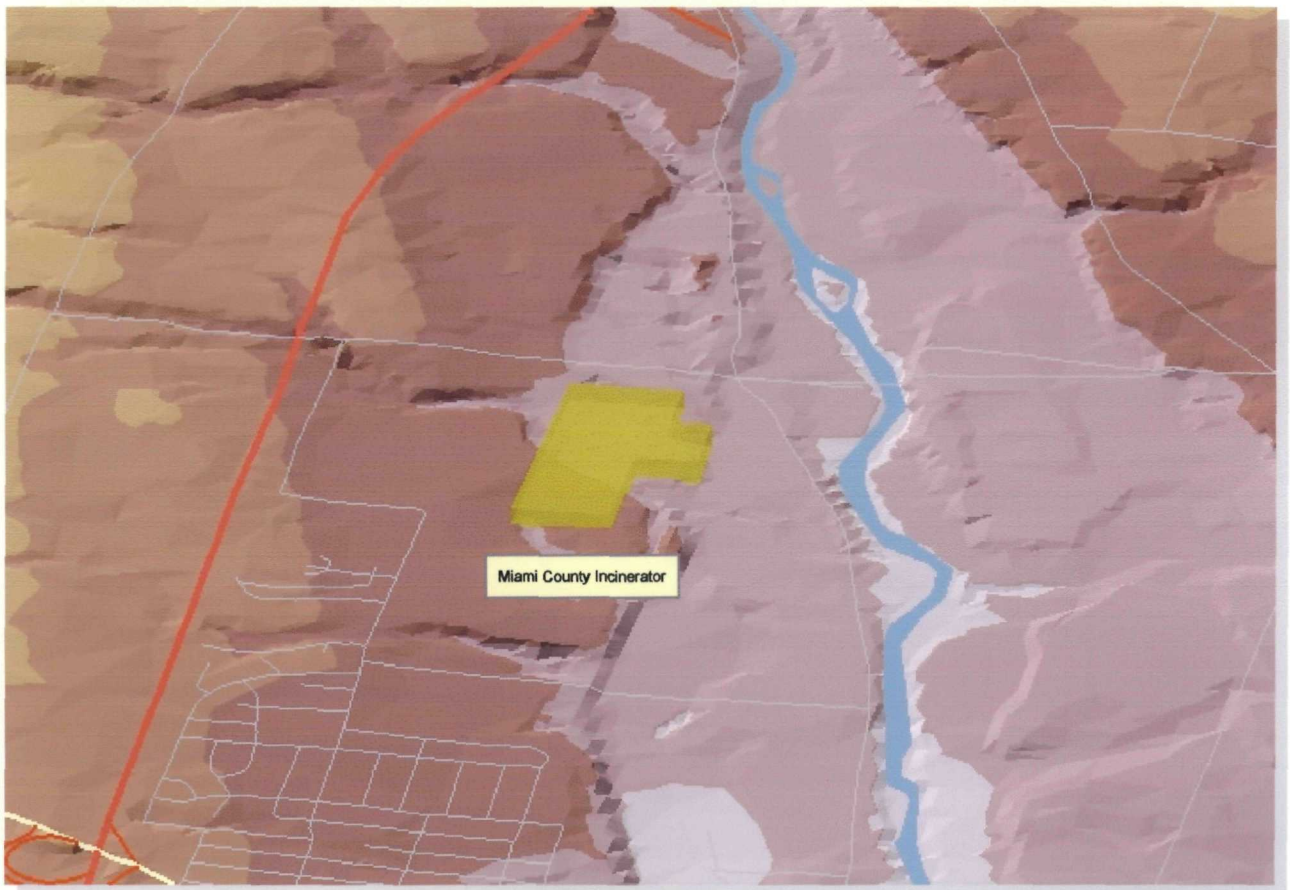


Figure 1

Plot created by Sarah Backhouse U.S. EPA Region 5 on 9/6/2005

GEOS
Groundwater Evaluation and Optimization System

Miami County Incinerator Superfund Site
3D Surface Terrain Model



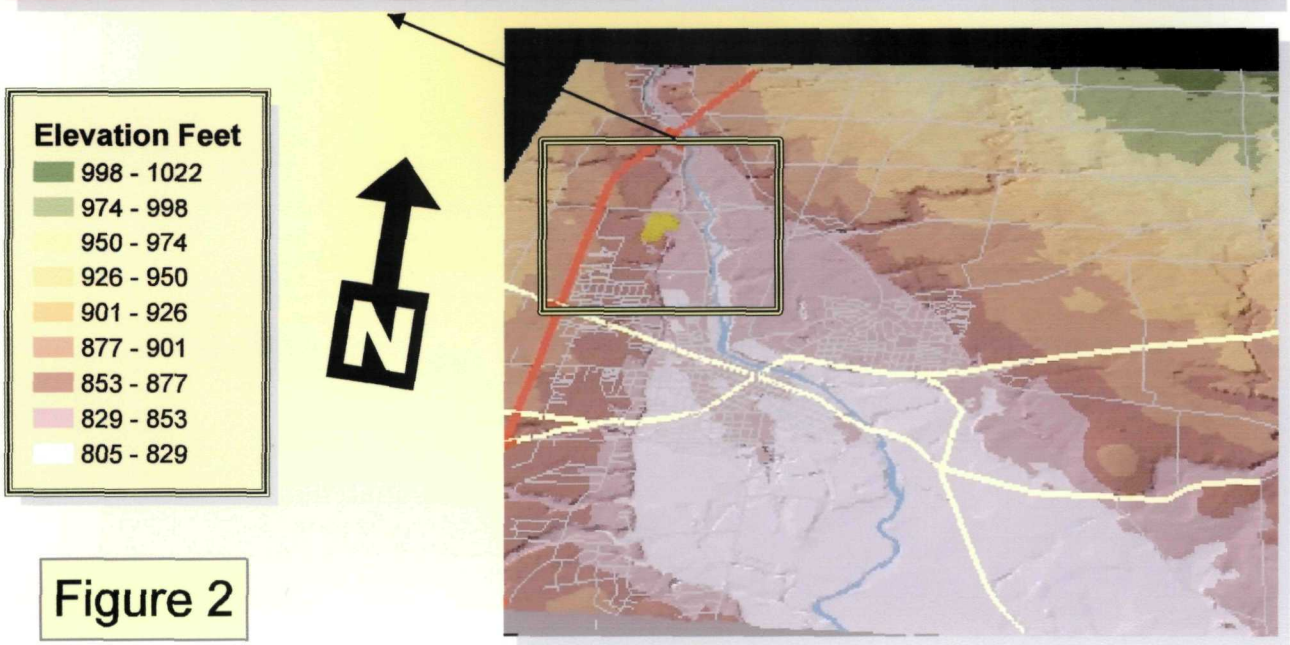


Figure 2

GEOS
Groundwater Evaluation and Optimization System

Plot created by Sarah Backhouse U.S. EPA Region 5 on 9/6/2006

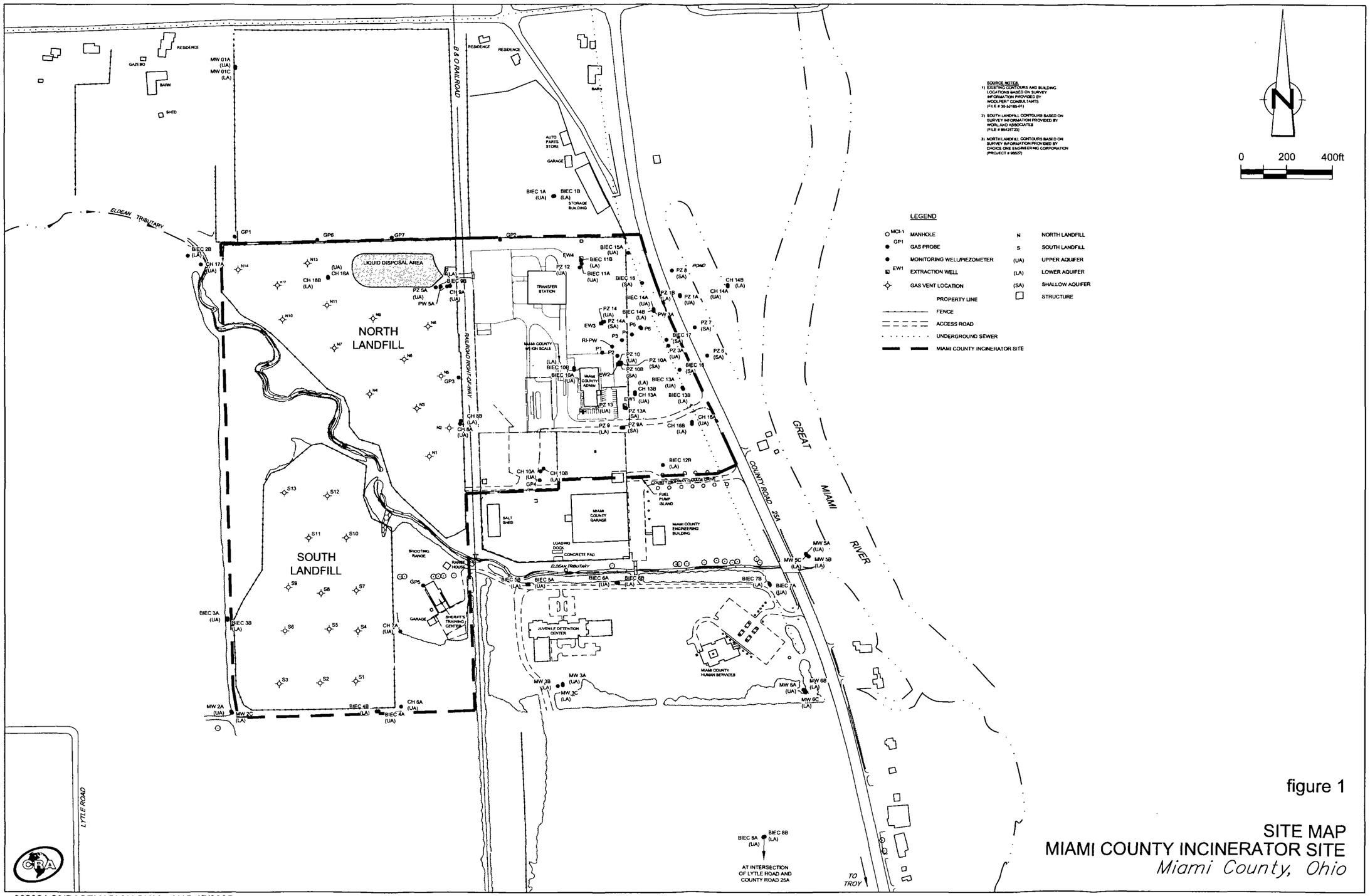


figure 1

SITE MAP
MIAMI COUNTY INCINERATOR SITE
Miami County, Ohio

002064-20(BASEMAP)GN-PX001 AUG 17/2005

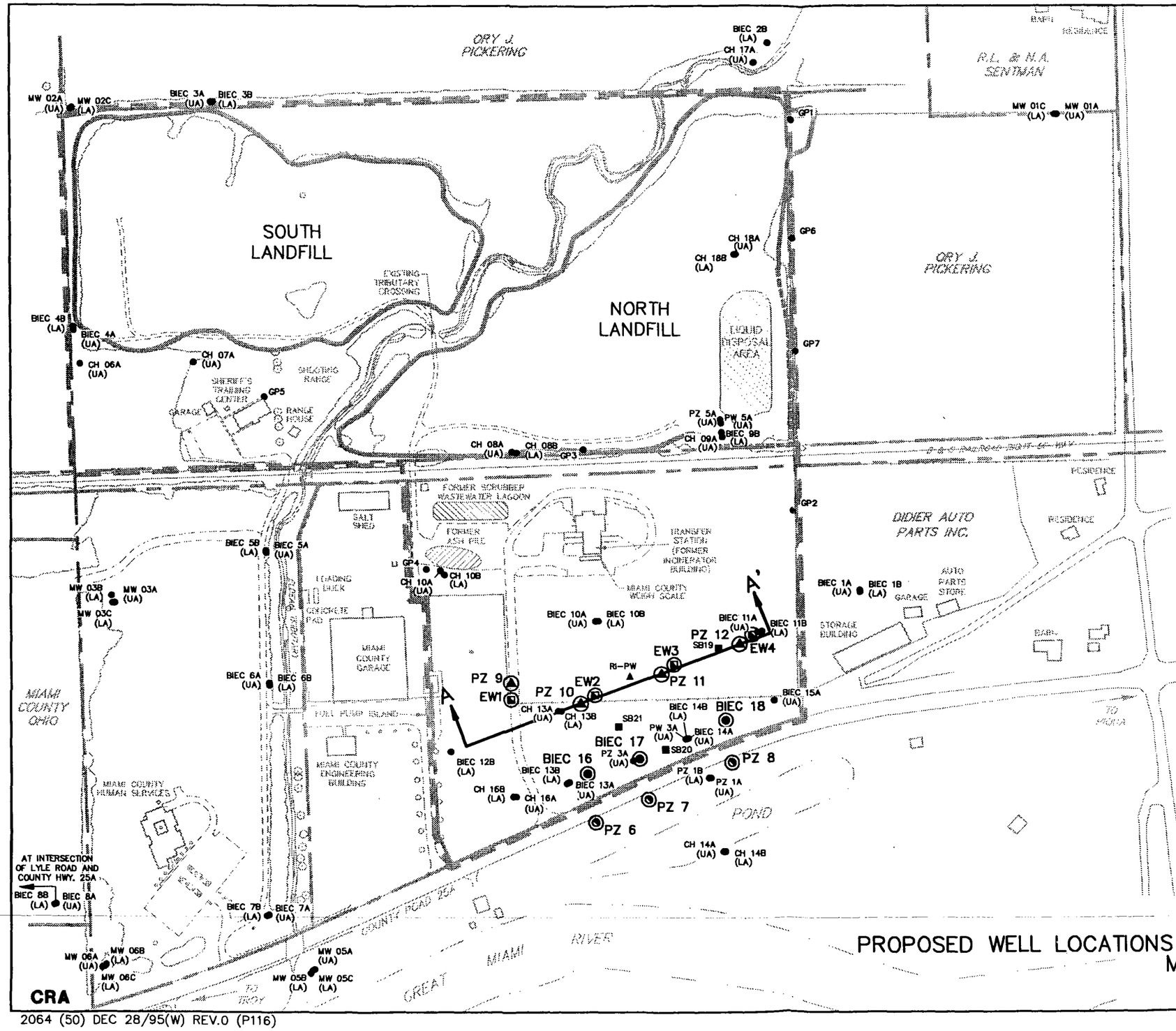


figure 9.1

PROPOSED WELL LOCATIONS AND CROSS-SECTION LOCATION
MIAMI COUNTY INCINERATOR SITE
Miami County, Ohio

2064 (50) DEC 28/95(W) REV.0 (P116)

ATTACHMENT C

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
MIAMI COUNTY INCINERATOR SITE
DECEMBER 2004

Sample Location		*BIEC1A*	*BIEC1B*	*BIEC1B*	*BIEC2B*	*BIEC2B*
Sample ID		*GW-2064-120104-NZ-112*	*GW-2064-120104-NZ-113*	*GW-2064-120104-NZ-114*	*GW-2064-120204-NZ-123*	*GW-2064-120204-NZ-124*
Sample Date		*12/1/2004*	*12/1/2004*	*12/1/2004*	*12/2/2004*	*12/2/2004*
				Duplicate		*Duplicate*
Parameter	*Units*					
Volatile Organic Compounds						
1,1-Dichloroethane	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Chloroethane	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ug/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Ethylbenzene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methylene chloride	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	1.7	ND (1.0)
Tetrachloroethene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Toluene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
trans-1,2-Dichloroethene	ug/L	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Trichloroethene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl chloride	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Semi-Volatile Organic Compounds						
bis(2-Ethylhexyl)phthalate	ug/L	-	-	-	-	-
Metals						
Lead	ug/L	-	-	-	-	-

Notes:
J - Estimated value.
ND - Not detected at associated value.
U - Qualified as not detected.
- - Not analyzed.

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
MIAMI COUNTY INCINERATOR SITE
DECEMBER 2004

Sample Location		*BIEC3A*	*BIEC3B*	*BIEC9B*	*BIEC10A*	*BIEC10B*
Sample ID		*GW-2064-120104-NZ-115*	*GW-2064-120104-NZ-117*	*GW-2064-120604-NZ-149*	*GW-2064-120604-NZ-150*	*GW-2064-120604-NZ-151*
Sample Date		*12/1/2004*	*12/1/2004*	*12/6/2004*	*12/6/2004*	*12/6/2004*
Parameter	*Units*					
Volatile Organic Compounds						
1,1-Dichloroethane	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	6.2	ND (1.0)
Chloroethane	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	16	ND (1.0)
cis-1,2-Dichloroethene	ug/L	ND (0.50)	ND (0.50)	ND (0.50)	71	ND (0.50)
Ethylbenzene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (2.0)	ND (1.0)
Methylene chloride	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (2.0)	ND (1.0)
Tetrachloroethene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (2.0)	ND (1.0)
Toluene	ug/L	ND (1.0)	ND (1.0)	0.19 J	ND (2.0)	ND (1.0)
trans-1,2-Dichloroethene	ug/L	ND (0.50)	ND (0.50)	ND (0.50)	2.9	ND (0.50)
Trichloroethene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (2.0)	ND (1.0)
Vinyl chloride	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	5.7	ND (1.0)
Semi-Volatile Organic Compounds						
bis(2-Ethylhexyl)phthalate	ug/L	-	-	10 U	10 U	10 U
Metals						
Lead	ug/L	-	-	ND (3.0)	ND (3.0)	ND (3.0)

Notes:
J - Estimated value.
ND - Not detected at associated value.
U - Qualified as not detected.
- - Not analyzed.

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
MIAMI COUNTY INCINERATOR SITE
DECEMBER 2004

Sample Location		*BIEC10B*	*BIEC11A*	*BIEC11B*	*BIEC12B*	*BIEC13A*
Sample ID		*GW-2064-120604-NZ-152*	*GW-2064-120304-NZ-143*	*GW-2064-120304-NZ-142*	*GW-2064-120204-NZ-134*	*GW-2064-120104-NZ-110*
Sample Date		*12/6/2004*	*12/3/2004*	*12/3/2004*	*12/2/2004*	*12/1/2004*
		Duplicate				
Parameter	*Units*					
Volatile Organic Compounds						
1,1-Dichloroethane	ug/L	ND (1.0)	22	2.0	ND (1.0)	ND (1.0)
Chloroethane	ug/L	ND (1.0)	5.0 J	0.96 J	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ug/L	ND (0.50)	410	29	ND (0.50)	ND (0.50)
Ethylbenzene	ug/L	ND (1.0)	ND (12)	ND (1.0)	ND (1.0)	ND (1.0)
Methylene chloride	ug/L	ND (1.0)	5.0 J	1.8	1.0	ND (1.0)
Tetrachloroethene	ug/L	ND (1.0)	ND (12)	ND (1.0)	ND (1.0)	ND (1.0)
Toluene	ug/L	ND (1.0)	ND (12)	ND (1.0)	ND (1.0)	ND (1.0)
trans-1,2-Dichloroethene	ug/L	ND (0.50)	21	2.0	ND (0.50)	ND (0.50)
Trichloroethene	ug/L	ND (1.0)	ND (12)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl chloride	ug/L	ND (1.0)	23	0.76 J	ND (1.0)	5.9
Semi-Volatile Organic Compounds						
bis(2-Ethylhexyl)phthalate	ug/L	10 U	ND (10)	10 U	ND (10)	ND (10)
Metals						
Lead	ug/L	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)

Notes:
J - Estimated value.
ND - Not detected at associated value.
U - Qualified as not detected.
- - Not analyzed.

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
MIAMI COUNTY INCINERATOR SITE
DECEMBER 2004

Sample Location		*BIEC13B*	*BIEC14A*	*BIEC14B*	*BIEC14B*	*BIEC15A*
Sample ID		*GW-2064-120104-NZ-111*	*GW-2064-120304-NZ-136*	*GW-2064-120304-NZ-137*	*GW-2064-120304-NZ-138*	*GW-2064-120304-NZ-140*
Sample Date		*12/1/2004*	*12/3/2004*	*12/3/2004*	*12/3/2004*	*12/3/2004*
					Duplicate	
Parameter	*Units*					
Volatile Organic Compounds						
1,1-Dichloroethane	ug/L	ND (1.0)	6.9	ND (1.0)	ND (1.0)	ND (1.0)
Chloroethane	ug/L	ND (1.0)	1.9 J	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ug/L	ND (0.50)	140	ND (0.50)	ND (0.50)	ND (0.50)
Ethylbenzene	ug/L	ND (1.0)	ND (5.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methylene chloride	ug/L	ND (1.0)	2.5 J	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethene	ug/L	ND (1.0)	ND (5.0)	ND (1.0)	ND (1.0)	ND (1.0)
Toluene	ug/L	ND (1.0)	ND (5.0)	ND (1.0)	ND (1.0)	ND (1.0)
trans-1,2-Dichloroethene	ug/L	ND (0.50)	5.3	ND (0.50)	ND (0.50)	ND (0.50)
Trichloroethene	ug/L	ND (1.0)	ND (5.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl chloride	ug/L	ND (1.0)	3.8 J	ND (1.0)	ND (1.0)	ND (1.0)
Semi-Volatile Organic Compounds						
bis(2-Ethylhexyl)phthalate	ug/L	0.52 J	10 U	ND (10)	ND (10)	ND (10)
Metals						
Lead	ug/L	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)

Notes:
J - Estimated value.
ND - Not detected at associated value.
U - Qualified as not detected.
- - Not analyzed.

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
MIAMI COUNTY INCINERATOR SITE
DECEMBER 2004

Sample Location		*BIEC16*	*BIEC17*	*BIEC18*	*CH9A*	*CH10A*
Sample ID		*GW-2064-120604-NZ-144*	*GW-2064-120604-NZ-153*	*GW-2064-120304-NZ-141*	*GW-2064-120604-NZ-147*	*GW-2064-120604-NZ-145*
Sample Date		*12/6/2004*	*12/6/2004*	*12/3/2004*	*12/6/2004*	*12/6/2004*
Parameter	*Units*					
Volatile Organic Compounds						
1,1-Dichloroethane	ug/L	0.94 J	2.2	0.33 J	47	0.76 J
Chloroethane	ug/L	ND (1.0)	0.70 J	ND (1.0)	71	ND (1.0)
cis-1,2-Dichloroethene	ug/L	1.3	3.7	1.3	130	0.50
Ethylbenzene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	14	0.26 J
Methylene chloride	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (5.0)	ND (1.0)
Tetrachloroethene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	ND (5.0)	5.2
Toluene	ug/L	1.0 U	1.0 U	ND (1.0)	1.6 J	1.0 U
trans-1,2-Dichloroethene	ug/L	ND (0.50)	0.26 J	ND (0.50)	4.0	ND (0.50)
Trichloroethene	ug/L	ND (1.0)	ND (1.0)	0.58 J	3.9 J	0.33 J
Vinyl chloride	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	96	ND (1.0)
Semi-Volatile Organic Compounds						
bis(2-Ethylhexyl)phthalate	ug/L	10 U	10 U	10 U	10 U	10 U
Metals						
Lead	ug/L	3.8	ND (3.0)	8.0	6.2	86.0

Notes:
J - Estimated value.
ND - Not detected at associated value.
U - Qualified as not detected.
- - Not analyzed.

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
MIAMI COUNTY INCINERATOR SITE
DECEMBER 2004

Sample Location		*CH10B*	*CH14A*	*CH14A*	*CH14B*	*CH16A*
Sample ID		*GW-2064-120604-NZ-146*	*GW-2064-120204-NZ-128*	*GW-2064-120204-NZ-129*	*GW-2064-120204-NZ-130*	*GW-2064-120204-NZ-131*
Sample Date		*12/6/2004*	*12/2/2004*	*12/2/2004*	*12/2/2004*	*12/2/2004*
				Duplicate		
Parameter	*Units*					
Volatile Organic Compounds						
1,1-Dichloroethane	ug/L	2.5	34	34	31	ND (1.0)
Chloroethane	ug/L	0.37 J	ND (8.3)	ND (10)	ND (20)	ND (1.0)
cis-1,2-Dichloroethene	ug/L	0.32 J	280	290	650	ND (0.50)
Ethylbenzene	ug/L	ND (1.0)	ND (8.3)	ND (10)	ND (20)	ND (1.0)
Methylene chloride	ug/L	ND (1.0)	11 U	14 U	28 U	ND (1.0)
Tetrachloroethene	ug/L	ND (1.0)	ND (8.3)	ND (10)	ND (20)	ND (1.0)
Toluene	ug/L	1.0 U	ND (8.3)	ND (10)	ND (20)	ND (1.0)
trans-1,2-Dichloroethene	ug/L	ND (0.50)	22	19	35	ND (0.50)
Trichloroethene	ug/L	0.75 J	ND (8.3)	ND (10)	ND (20)	ND (1.0)
Vinyl chloride	ug/L	ND (1.0)	4.0 J	4.1 J	20	4.3
Semi-Volatile Organic Compounds						
bis(2-Ethylhexyl)phthalate	ug/L	10 U	10 U	10 U	10 U	10 U
Metals						
Lead	ug/L	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)

Notes:
J - Estimated value.
ND - Not detected at associated value.
U - Qualified as not detected.
- - Not analyzed.

ANALYTICAL RESULTS SUMMARY
GROUNDWATER SAMPLING
MIAMI COUNTY INCINERATOR SITE
DECEMBER 2004

Sample Location		*CH16B*	*CH17A*	*CH18A*
Sample ID		*GW-2064-120204-NZ-133*	*GW-2064-120204-NZ-126*	*GW-2064-120204-NZ-127*
Sample Date		*12/2/2004*	*12/2/2004*	*12/2/2004*
Parameter	*Units*			
Volatile Organic Compounds				
1,1-Dichloroethane	ug/L	ND (1.0)	ND (1.0)	ND (1.0)
Chloroethane	ug/L	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethene	ug/L	ND (0.50)	ND (0.50)	ND (0.50)
Ethylbenzene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)
Methylene chloride	ug/L	*ND (1.0)*	ND (1.0)	ND (1.0)
Tetrachloroethene	ug/L	ND (1.0)	ND (1.0)	ND (1.0)
Toluene	ug/L	*0.87 J*	*ND (1.0)*	*ND (1.0)*
trans-1,2-Dichloroethene	ug/L	ND (0.50)	ND (0.50)	ND (0.50)
Trichloroethene	ug/L	ND (1.0)	ND (1.0)	3.7
Vinyl chloride	ug/L	5.8	ND (1.0)	ND (1.0)
Semi-Volatile Organic Compounds				
bis(2-Ethylhexyl)phthalate	ug/L	10 U	-	10 U
Metals				
Lead	ug/L	ND (3.0)	-	ND (3.0)

Notes:
J - Estimated value.
ND - Not detected at associated value.
U - Qualified as not detected.
- - Not analyzed.

SUMMARY OF EXTRACTION WELL ANALYTICAL DATA
SSPL VOC
MIAMI COUNTY INCINERATOR SITE
MIAMI COUNTY, OHIO
DECEMBER 2004

Sample Location		*EW-1*	*EW-2*	*EW-3*	*EW-4*	*PW-5A*
Sample ID		*GW-2064-120104-NZ-118*	*GW-2064-120104-NZ-119*	*GW-2064-120104-NZ-120*	*GW-2064-120104-NZ-121*	*GW-2064-120204-NZ-135*
Sample Date		*12/1/2004*	*12/1/2004*	*12/1/2004*	*12/1/2004*	*12/2/2004*
Parameter	*Units*					
Volatile Organic Compounds						
1,1-Dichloroethane	ug/L	15	7.4	5.6	0.84 J	13 J
Chloroethane	ug/L	2.3	14	8.3	1.3	57
cis-1,2-Dichloroethene	ug/L	29	69	120	18	32
Ethylbenzene	ug/L	ND (1.0)	ND (2.5)	ND (5.0)	ND (1.0)	220
Methylene chloride	ug/L	ND (1.0)	2.5 U	5.7 U	ND (1.0)	ND (17)
Tetrachloroethene	ug/L	ND (1.0)	ND (2.5)	ND (5.0)	ND (1.0)	ND (17)
Toluene	ug/L	ND (1.0)	ND (2.5)	ND (5.0)	ND (1.0)	95
trans-1,2-Dichloroethene	ug/L	1.8	2.0	3.4	1.4	ND (8.3)
Trichloroethene	ug/L	ND (1.0)	ND (2.5)	ND (5.0)	0.81 J	ND (17)
Vinyl chloride	ug/L	13	76	31	4.6	24

ATTACHMENT D

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

Five-Year Review Site Inspection Checklist (Template)

I. SITE INFORMATION

Site name: Miami County Incinerator	**Date of inspection:** 8/15/05
Location and Region: Troy, Ohio Reg. 5	**EPA ID:** OHD980611800
Agency, office, or company leading the five-year review:	**Weather/temperature:**

Remedy Includes: (Check all that apply)

- ☑ Landfill cover/containment
- ☑ Access controls
- ☑ Institutional controls
- ☑ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other _____
- ☑ Monitored natural attenuation
- ☑ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** John McGarry (Name) Sanitary Engineer (Title) 8/15/05 (Date)
   Interviewed ☑ at site ☐ at office ☐ by phone Phone no. 937-440-5653
   Problems, suggestions; ☐ Report attached _____

2. **O&M staff** Doug Evans (Name) Asst. Sanitary Engineer (Title) 8/15/05 (Date)
   Interviewed ☑ at site ☐ at office ☐ by phone Phone no. 937-440-5653
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

Steve Whillier - Conestoga Rovers (Environmental Contractor)
at s.k, 8/15/05 phone: 602-749-9400

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

☑ O&M manual	☑ Readily available	☐ Up to date	☐ N/A
☑ As-built drawings	☑ Readily available	☑ Up to date	☐ N/A
☑ Maintenance logs	☑ Readily available	☑ Up to date	☐ N/A

Remarks _____

2.	**Site Specific Health and Safety Plan**	☑ Readily available	☑ Up to date	☐ N/A
	☑ Contingency plan/emergency response plan	☑ Readily available	☑ Up to date	☐ N/A
	Remarks			
3.	**O&M and OSHA Training Records**	☑ Readily available	☑ Up to date	☐ N/A
	Remarks			
4.	**Permits and Service Agreements**			
	☐ Air discharge permit	☐ Readily available	☐ Up to date	☑ N/A
	☐ Effluent discharge	☐ Readily available	☐ Up to date	☑ N/A
	☑ Waste disposal, POTW	☑ Readily available	☑ Up to date	☐ N/A
	☐ Other permits	☐ Readily available	☐ Up to date	☑ N/A
	Remarks			
5.	**Gas Generation Records**	☐ Readily available	☐ Up to date	☑ N/A
	Remarks Nothing was picked up when there was gas monitoring.			
6.	**Settlement Monument Records**	☐ Readily available	☐ Up to date	☑ N/A
	Remarks			
7.	**Groundwater Monitoring Records**	☑ Readily available	☑ Up to date	☐ N/A
	Remarks Mailed to U.S. EPA regularly.			
8.	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	☑ N/A
	Remarks			
9.	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	☑ N/A
	☑ Water (effluent)	☑ Readily available	☑ Up to date	☐ N/A
	Remarks POTW Permit			
10.	**Daily Access/Security Logs**	☐ Readily available	☐ Up to date	☑ N/A
	Remarks			

IV. O&M COSTS

1.	**O&M Organization**	
	☐ State in-house	☐ Contractor for State
	☑ PRP in-house	☑ Contractor for PRP
	☐ Federal Facility in-house	☐ Contractor for Federal Facility
	☐ Other County facility, so PRP does some of O&M.	

2. **O&M Cost Records**

☑ Readily available ☐ Up to date

☐ Funding mechanism/agreement in place

Original O&M cost estimate_____ ☐ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS ☐ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☐ N/A

Remarks No Damage

B. Other Access Restrictions

1. **Signs and other security measures** ☑ Location shown on site map ☐ N/A

Remarks front access security

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☑ No ☐ N/A

Site conditions imply ICs not being fully enforced ☐ Yes ☑ No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) PRP uses land

Frequency _____

Responsible party/agency _____

Contact Jim McBarny (Name) Sanitary Engineer (Title) _____ (Date) _____ (Phone no.)

Reporting is up-to-date ☐ Yes ☐ No ☑ N/A

Reports are verified by the lead agency ☐ Yes ☐ No ☑ N/A

Specific requirements in deed or decision documents have been met ☑ Yes ☐ No ☐ N/A

Violations have been reported ☐ Yes ☐ No ☑ N/A

Other problems or suggestions: ☐ Report attached

2. **Adequacy** ☐ ICs are adequate ☐ ICs are inadequate ☑ N/A

Remarks Study being done By PRP's.

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☑ No vandalism evident

Remarks _____

2. **Land use changes on site** ☐ N/A

Remarks No Change.

3. **Land use changes off site** ☐ N/A

Remarks No Changes

VI. GENERAL SITE CONDITIONS

A. Roads ☑ Applicable ☐ N/A

1. **Roads damaged** ☑ Location shown on site map ☑ Roads adequate ☐ N/A

Remarks No damage

B. Other Site Conditions landfill caps in good condition

Remarks _____

VII. LANDFILL COVERS ☐ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☑ Settlement not evident
   Areal extent _____ Depth _____
   Remarks _____

2. **Cracks** ☐ Location shown on site map ☑ Cracking not evident
   Lengths _____ Widths _____ Depths _____
   Remarks _____

3. **Erosion** ☐ Location shown on site map ☑ Erosion not evident
   Areal extent _____ Depth _____
   Remarks _____

4. **Holes** ☐ Location shown on site map ☑ Holes not evident
   Areal extent _____ Depth _____
   Remarks _____

5. **Vegetative Cover** ☑ Grass ☑ Cover properly established ☐ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks _____

6. **Alternative Cover (armored rock, concrete, etc.)** ☐ N/A
   Remarks concrete over old ash area in good condition

7. **Bulges** ☐ Location shown on site map ☑ Bulges not evident
   Areal extent _____ Height _____
   Remarks _____

8. **Wet Areas/Water Damage** ☑ Wet areas/water damage not evident
   ☐ Wet areas ☐ Location shown on site map Areal extent _____
   ☐ Ponding ☐ Location shown on site map Areal extent _____
   ☐ Seeps ☐ Location shown on site map Areal extent _____
   ☐ Soft subgrade ☐ Location shown on site map Areal extent _____
   Remarks _____

9. **Slope Instability** ☐ Slides ☐ Location shown on site map ☑ No evidence of slope instability
Areal extent_____
Remarks_____

B. Benches ☐ Applicable ☑ N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay
Remarks_____

2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay
Remarks_____

3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay
Remarks_____

C. Letdown Channels ☐ Applicable ☑ N/A
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ☐ No evidence of settlement
Areal extent_____ Depth_____
Remarks_____

2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation
Material type_____ Areal extent_____
Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion
Areal extent_____ Depth_____
Remarks_____

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☑ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☑ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☑ Passive
☑ Properly secured/locked ☑ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks No Sampling required

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☑ N/A
Remarks No longer done

3. **Monitoring Wells** (within surface area of landfill)
☑ Properly secured/locked ☑ Functioning ☑ Routinely sampled ☑ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☑ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☑ N/A
Remarks_____

E. Gas Collection and Treatment ☐ Applicable ☑ N/A

1. **Gas Treatment Facilities**
☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
☐ Good condition ☐ Needs Maintenance
Remarks_____

2. **Gas Collection Wells, Manifolds and Piping**
☐ Good condition ☐ Needs Maintenance
Remarks_____

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
☐ Good condition ☐ Needs Maintenance ☐ N/A
Remarks_____

F. Cover Drainage Layer ☑ Applicable ☐ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☑ N/A
   Remarks _____

2. **Outlet Rock Inspected** ☑ Functioning ☐ N/A
   Remarks drainage swales & rip in good condition.

G. Detention/Sedimentation Ponds ☐ Applicable ☑ N/A

1. **Siltation** Areal extent _____ Depth _____ ☐ N/A
   ☐ Siltation not evident
   Remarks _____

2. **Erosion** Areal extent _____ Depth _____
   ☐ Erosion not evident
   Remarks _____

3. **Outlet Works** ☐ Functioning ☐ N/A
   Remarks _____

4. **Dam** ☐ Functioning ☐ N/A
   Remarks _____

H. Retaining Walls ☐ Applicable ☑ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement _____ Vertical displacement _____
   Rotational displacement _____
   Remarks _____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks _____

I. Perimeter Ditches/Off-Site Discharge ☑ Applicable ☐ N/A

1. **Siltation** ☐ Location shown on site map ☑ Siltation not evident
   Areal extent _____ Depth _____
   Remarks _____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
   ☑ Vegetation does not impede flow
   Areal extent _____ Type _____
   Remarks _____

3. **Erosion** ☐ Location shown on site map ☑ Erosion not evident
Areal extent_____ Depth_____
Remarks_____

4. **Discharge Structure** ☑ Functioning ☐ N/A
Remarks_____

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☑ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
Areal extent_____ Depth_____
Remarks_____

2. **Performance Monitoring** Type of monitoring_____
☐ Performance not monitored
Frequency_____ ☐ Evidence of breaching
Head differential_____
Remarks_____

IX. GROUNDWATER/SURFACE WATER REMEDIES ☑ Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☑ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
☑ Good condition ☑ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☑ Good condition ☐ Needs Maintenance
Remarks_____

3. **Spare Parts and Equipment**
☑ Readily available ☑ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks Contractor brings in pump replacement parts.

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☑ N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition ☐ Needs Maintenance
Remarks_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks_____

3. **Spare Parts and Equipment**
☑ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks Brought in by contractor

C. Treatment System ☐ Applicable ☑ N/A

1. **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers
☐ Filters
☐ Additive (*e.g.*, chelation agent, flocculent)
☐ Others
☐ Good condition ☐ Needs Maintenance
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually
☐ Quantity of surface water treated annually
Remarks

2. **Electrical Enclosures and Panels** (properly rated and functional)
☐ N/A ☑ Good condition ☐ Needs Maintenance
Remarks

3. **Tanks, Vaults, Storage Vessels**
☑ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
Remarks

4. **Discharge Structure and Appurtenances**
☐ N/A ☑ Good condition ☐ Needs Maintenance
Remarks

5. **Treatment Building(s)**
☑ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks

6. **Monitoring Wells** (pump and treatment remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☑ N/A
Remarks

D. Monitoring Data

1. Monitoring Data
☑ Is routinely submitted on time ☑ Is of acceptable quality

2. Monitoring data suggests:
☑ Groundwater plume is effectively contained ☑ Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

☑ Properly secured/locked ☑ Functioning ☑ Routinely sampled ☑ Good condition
☑ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

See five year review.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

See five year review.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

N/A. There has not been any changes to the cost of O&M (No dramatic cost changes).

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Chemical injections to the Liquid Disposal area could accellerate the remediation / breakdown of the COC's.

ATTACHMENT E

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

VIA CERTIFIED MAIL

May 19, 2005

Mr. James McGarry, P.E.
Miami County Sanitary District/BIEC
651 Colby Drive
Troy, Ohio, N2V 1C2

Re: Miami County Incinerator Superfund Site
Institutional Controls Investigation/Study
Troy, Ohio
Civil Action No. C-3-93-396

Dear Mr. McGarry:

The U.S. Environmental Protection Agency ("EPA") is undertaking an initiative to evaluate institutional controls ("ICs") at Superfund sites. ICs may be needed to restrict uses of sites where on-site hazardous substances remain above levels that allow for unlimited use and unrestricted exposure. ICs may be necessary to prevent interference with Superfund remedy components. A description of EPA's IC initiative may be found in "Strategy to Ensure Institutional Control Implementation at Superfund Sites,"OSWER No. 9355.0-106 (2004), http://www.epa.gov/superfund/action/ic/strategy.htm.

EPA is seeking the cooperation of potentially responsible parties as part of this nationwide effort. The purpose of this letter is to seek your assistance in evaluating ICs for the Miami County Incinerator Superfund Site located at Troy, Ohio. Specifically, EPA is requesting that you notify EPA within 30 days of the date of this letter whether Business and Industry Environmental Committee (BIEC) wishes to participate in EPA's review of which ICs are appropriate for the protection of human health and the environment at this Site.

The IC investigation will also be used by EPA in its current review of the remedial action for the Site pursuant to Section 121 of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9621. Section 121 of CERCLA mandates that, no less often than every five years, EPA must review remedial actions where hazardous substances, pollutants or contaminants remain in place to assure that human health and the environment are being protected by the remedial action.

As you know BIEC has implemented a remedial action for the Site pursuant to Consent Decree, Civil Action No. C-3-93-396, ("Consent Decree"), which includes the following remedy components and performance standards:

a) remediation of soil to industrial cleanup levels;
b) pump and treatment of groundwater until achievement of MCLs;
c) RCRA Subtitle D landfill cap;
d) deed restrictions on the north and south landfills;
e) placement of the residents, down gradient of the landfill, on potable water from the city of Troy;

The Site remedy does not allow unlimited use and unrestricted exposure. The long term protectiveness, effectiveness and integrity of the remedy depends on compliance with ICs that implement the following land/groundwater restrictions:

Land and Groundwater Use Restrictions:

a) prohibit residential use of the areas where soil has been remediated to commercial/industrial cleanup standards;
b) prohibit interference with remedy components of the groundwater pump and treat system and adjacent areas;
c) prohibit interference with Subtitle D landfill cap and adjacent areas;
d) prohibit consumptive use of the groundwater plume area until cleanup standards are achieved.

The goal of the IC investigation is: a) to evaluate whether institutional controls currently exist that adequately implement the restrictions described above; b) to identify and recommend any corrective measures to existing ICs necessary for their effectiveness; and c) to recommend any new or additional ICs necessary to achieve and maintain the land and groundwater use restrictions and performance standards described above.

IC Investigation Report requirements

Within 90 days of receipt of this letter, please submit a draft IC investigation report to EPA for review and approval that includes the following minimum requirements:

For Proprietary Controls include the requirements below:

1. Maps (paper and GIS) that depict parcel numbers and identify all areas of the Site that may require the land and groundwater use restrictions described above;

2. A legal description sufficient for an effective title search/commitment (e.g. metes and bounds or reference to recorded plat or other recorded survey) for the areas of the Site that may require the land and groundwater restrictions described above;

3. Certified copies by the Recorder of Deeds (or other appropriate land records office) showing clerk's recording stamps of existing proprietary controls, if any, such as environmental restrictive covenants/easements for the areas of the Site that require land and groundwater restrictions described above. Maps (paper and GIS) that depict parcel numbers and the areas and remedial components covered by existing proprietary controls.

4. Title commitment (or current ownership and encumbrances report similar to what is obtained with a title commitment) showing the current status of title for the areas that may require the land and groundwater restrictions described above. Include copies of encumbrances referenced in schedule B of the title commitment or identified in the current ownership and current encumbrances report. Include copies of leases and subleases affecting the areas that require the land and groundwater restrictions described above. Include copies of subrogation agreements that have or will be obtained for such encumbrances. Identify encumbrances on maps (paper and GIS) that depict parcel numbers and the area impacted by the encumbrance;

5. Assessment of whether the extent of the existing proprietary controls (legal description) matches the extent of the land and groundwater restrictions described above

6. Assessment of whether proprietary controls that implement the land and groundwater restrictions described above appear as an encumbrance in the chain of title;

7. Identification of any prior-in-time encumbrances that negatively impact existing proprietary controls and the land and groundwater restrictions described above and whether subrogation agreements have or will be obtained for such encumbrances;

8. Assessment of whether existing proprietary controls have been executed in a legally enforceable manner. Discuss whether a grantee or prior owner "holds" the proprietary controls. Discuss whether the current owner is under an obligation to comply with any existing land and groundwater restrictions described above. Discuss whether existing proprietary controls "run with the land" (i.e. restrictions are binding on subsequent property owners);

9. Summary of site inspection, interviews with owners, lessees and other holders of property interests. Discuss whether there is compliance with the land and groundwater restrictions described above. Discuss whether owners and lessees are aware of and complying with the restrictions. Discuss whether existing ICs are preventing exposure. Discuss whether land and/or resource use has changed since execution of the June 30, 1989 Record of Decision. Discuss whether the property owner has any plans to sell or transfer the property. If so, what are the plans regarding property's ICs. Discuss how the current land and resource uses relate to exposure assumptions and risk calculations. Discuss whether there are any unintended consequences resulting from the use of a particular restriction.

10. Assessment of Monitoring: Discuss how, when and by whom compliance with the proprietary controls is monitored. Discuss whether the results of the IC monitoring are routinely

and promptly shared with EPA and the State. Discuss whether there are measures in place to ensure that modifications to the restriction require EPA and the State approval. Discuss whether there is potential human or ecological exposure.

11. Assessment of whether the proprietary controls (or lack of controls) are effective in the short term in maintaining land/groundwater restrictions above, maintaining performance standards and preventing exposure.

12. Assessment of whether the proprietary control (or lack of controls) will be effective in the long term in maintaining the land and groundwater restrictions above, maintaining remedy performance standards and preventing exposure.

13. Recommendations: Propose proprietary controls and/or corrections to existing proprietary controls that are necessary to ensure that the land and groundwater use restrictions described above are implemented correctly, are maintained and will be protective in the short term and the long term. If proprietary controls are not listed as encumbrances in the title commitment, include draft proprietary controls or corrections to existing proprietary controls so that proprietary controls that implement the restrictions described above will appear as an encumbrance on the property. Propose necessary subrogation agreements. Propose monitoring requirements and modifications to the Operation and Maintenance Plan to ensure that ICs are maintained and complied within the short term and in the long term. The monitoring plan must include a schedule and an annual certification to EPA that ICs are in place and remain effective.

For Government Controls - include the following requirements

1. Identify and provide a current, dated and official copy of any existing governmental controls (ordinance, statutes etc). that implement the land/groundwater restrictions described above. Discuss whether the governmental controls match the extent of the restrictions described above. Discuss whether the governmental controls are in effect. Discuss whether associated maps or figures are available.

2. Summaries of site inspection and interviews with owners, lessees and affected parties such as homeowners, contractors, and governmental agency personnel. Address the following in your discussion. Is there compliance with the governmental control and is the property being used in a manner consistent with the restrictions above? Where can information be obtained about the governmental control (ordinance)? What is the availability of the governmental control (ordinance) to affected parties and resource users such as homeowners, contractors, etc.? Are affected parties and resource users aware of and understand the restrictions described above? Are the existing ICs preventing exposure? Have there been breaches of use restrictions described above. If so, how were they addressed by the governmental agency? Does the agency have up-to-date maps of known contamination areas? Discuss whether there is current or potential human or ecological exposure. Discuss whether land use or expected land use on or near the site has changed. Are there any new developments, either constructed or planned, in the

area? Are there any new construction permits pending? Discuss whether current levels of contamination allow unlimited and unrestricted exposure. Discuss whether land or resource use has changed since execution of the ROD. Discuss how the current land and resource uses relate to exposure assumptions and risk calculations. Discuss whether there are any unintended consequences resulting from the use of a particular restriction.

3. Assessment of Monitoring: How, when and by whom is compliance with the restrictions monitored? What procedures are in place for monitoring requests for variances from or changes to the governmental control? What procedures are in place for EPA, the State and PRPs to receive notice of any proposed changes to the governmental controls? What type of enforcement or remedy has been or will be implemented if there is a violation of the governmental control? Are the entities responsible for monitoring and enforcing the restrictions capable and willing to perform these duties presently and in the future? Does the local board have plans to approve any variances or other changes in zoning? Do any proposed variances exist?

4. Assessment of whether the governmental controls are effective in the short term in preventing exposure and maintaining the restrictions and remedy performance standards.

5. Assessment of whether the governmental controls are or will be effective in the long term in preventing exposure and maintaining the restrictions above and remedy performance standards.

6. Recommendations: Propose corrective measures to existing governmental controls and/or proposed additional governmental controls necessary to ensure that the restrictions described in above and performances standards are achieved and maintained. Propose monitoring requirements and modifications to the Operation and Maintenance Plan to ensure that the restrictions described above are achieved and maintained. The monitoring plan must include a schedule and an annual certification to EPA that ICs are in place and remain effective.

Under the Consent Decree, the Settling Defendants have agreed to implement studies and investigations in order to permit EPA to conduct reviews of whether the remedial action is protective of human health and the environment. The IC investigation is necessary for EPA to conduct its review of the whether the remedial action is protective of human health and the environment.

Please provide EPA with a notice of intent to comply with this request **within 30 days of the date of receipt of this letter**. If you have any questions concerning this request, please contact me at (312)353-8983.

Sincerely,

Michael Berkoff

Michael Berkoff, RPM
Superfund Division

Cc: Mr. Steve Whillier, B.Sc.
Conestoga-Rovers & Associates
651 Colby Drive
Waterloo, Ontario, Canada N2V 1C2

bcc: Larry Johnson, Site Attorney
Sheri Bianchin, IC Coordinator
Jan Carlson, IC Legal Coordinator
Chuck Mellon, PM Ohio EPA

ATTACHMENT F

OFFICE OF
COMMISSIONERS OF MIAMI COUNTY

Sanitary Engineering Department
2200 N. Co. Rd. 25A • Troy, Ohio 45373-1342
(937) 440-5653 • Fax (937) 335-4208

July 22, 2005

Michael Berkoff, RPM
USEPA Region 5: SR-6J
77 West Jackson Blvd.
Chicago IL 60604-3590

Re: *Miami County Incinerator Superfund Site*
I/C Controls Study

Dear Mr. Berkoff:

In response to your letter of May 19, 2005 and per our discussions earlier this week, I am forwarding our notice of intent to comply with your request to participate in the Institutional Control study for the Miami County *Incinerator Superfund Site.*

We will finalize our discussions concerning the report upon your visit for the 5-year inspection of the MCI Site on august 11, 2005.

Sincerely,

James A. McGarry
Miami County Sanitary Engineer/BIEC

Cc: Steve Whillier, CRA
Doug Evans, Miami County